



**City of Nashua
Wastewater Fund
Rate/Revenue Requirements Analysis
November 2013**

Wastewater Fund: Rate/Revenue Requirements Analysis

Page 3 – Schedule A – Analysis of Operations

Schedule A is the Analysis of Operations for the Wastewater Fund for the period FY2014 through FY2020. Included in the analysis is:

- 1) Percentage increases projected in Retail User Fees.
- 2) Projected Revenues and Expenditures from operational activities resulting in the calculation of Net Surplus from Operations for each year.
- 3) Projected Capital Costs and Expenditures offset by Debt Proceeds, Use of Funding from the Capital Equipment Reserve, and State Aid Grants resulting in Net Surplus or Deficit from Capital Projects and Expenditures for each year.
- 4) Projected Total Unrestricted Net Assets in the Fund - Unrestricted Retained Earnings and Capital Equipment Reserve.

Page 4 – Schedule B - Analysis of Capital Projects – Capital Expenditures

Schedule B is the Analysis of Capital Projects for the Wastewater Fund. Included in the analysis is:

- 1) A listing of the various Consent Decree Projects and Collections System and Other Expenditures.
- 2) For each project, the schedule shows the total project amount, the type and amount of financing used and the estimated spending plan for the years FY2014 to FY2020.

Page 5 - Schedule C – Analysis of Capital Projects – Capital Funding Sources

Schedule C is the Analysis of Capital Funding Sources for the Wastewater Fund. Included in the analysis is:

- 1) A listing of the Projects funded by debt along with the anticipated debt proceeds for each year.
- 2) Use of funds from the Capital Equipment Replacement Fund for each year.
- 3) A listing of State Aid Grants and the amounts anticipated to be received for the years FY2014 to FY2020.

Page 6 - Schedule D – Capital Equipment Replacement Fund Schedule

This table lists all plant and mobile equipment and includes year acquired, original cost, life, year of replacement, future value (projected value at year of replacement), and amount to reserve each year in order to reach that future value (with inflation and investment earnings factored in). This equipment is categorized by plant and collections.

Page 16 - Schedule E – Debt Service Schedule

This table shows the debt schedules for each of the projects being debt financed.

Page 17 - Schedule F – Analysis of Wastewater Fund

This table shows the year end fund balance and rate changes for FY2002 to FY2014.

City of Nashua
Analysis of Operations
FY2014 through FY2020

Schedule A

11/01/2013

Line No.	Description	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
1	Projected Percent Increase in Retail User Fees		15.00%	20.00%	15.00%	0.00%	0.00%	0.00%	0.00%
2	Effective Rate for the Fiscal Year Assuming a Mid-Year Rate Change		7.50%	10.00%	7.50%	0.00%	0.00%	0.00%	0.00%
3	Projected Percent Increase in Other Revenue		0.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%
4									
5	<u>Revenue</u>								
6	Retail User Fee Revenue - Base	\$ 9,875,000	\$ 9,875,000	\$ 11,356,250	\$ 13,627,500	\$ 15,671,625	\$ 15,671,625	\$ 15,671,625	\$ 15,671,625
7	Retail User Fee Revenue - Increase		740,625	1,135,625	1,022,063	-	-	-	-
8	Other Revenue		625,673	644,443	663,776	683,690	704,200	725,326	747,086
9	Total Revenues		<u>\$ 11,241,298</u>	<u>\$ 13,136,318</u>	<u>\$ 15,313,339</u>	<u>\$ 16,355,315</u>	<u>\$ 16,375,825</u>	<u>\$ 16,396,951</u>	<u>\$ 16,418,711</u>
10									
11	Projected Percent Increase in Operating Expenditures			3.00%	3.00%	3.00%	3.00%	3.00%	3.00%
12	<u>Expenditures</u>								
13	<u>Operating Expenditures</u>								
14	Personnel Related Expenditures		\$ 3,428,663	\$ 3,531,523	\$ 3,637,469	\$ 3,746,593	\$ 3,858,990	\$ 3,974,760	\$ 4,094,003
15	Operations and Maintenance		3,224,042	3,320,763	3,420,386	3,522,998	3,628,688	3,737,548	3,849,675
16	Subtotal - Operating Expenditures		<u>\$ 6,652,705</u>	<u>\$ 6,852,286</u>	<u>\$ 7,057,855</u>	<u>\$ 7,269,590</u>	<u>\$ 7,487,678</u>	<u>\$ 7,712,308</u>	<u>\$ 7,943,678</u>
17									
18	<u>Non-Operating Expenditures</u>								
19	Reserve for Replacements		\$ 1,607,129	\$ 1,607,129	\$ 1,607,129	\$ 1,607,129	\$ 1,607,129	\$ 1,607,129	\$ 1,607,129
20	Buildings and Improvements		175,000	175,000	175,000	175,000	175,000	175,000	175,000
21	Debt Service Payments (Schedule E)		3,262,115	3,624,905	5,042,870	4,934,065	4,819,360	4,704,654	4,589,949
22	Subtotal - Non-Operating Expenditures		<u>\$ 5,044,244</u>	<u>\$ 5,407,034</u>	<u>\$ 6,824,999</u>	<u>\$ 6,716,194</u>	<u>\$ 6,601,489</u>	<u>\$ 6,486,783</u>	<u>\$ 6,372,078</u>
23									
24	Total Expenditures		<u>\$ 11,696,949</u>	<u>\$ 12,259,320</u>	<u>\$ 13,882,854</u>	<u>\$ 13,985,784</u>	<u>\$ 14,089,167</u>	<u>\$ 14,199,091</u>	<u>\$ 14,315,756</u>
25									
26	Net Surplus From Operations		<u>\$ (455,651)</u>	<u>\$ 876,998</u>	<u>\$ 1,430,485</u>	<u>\$ 2,369,531</u>	<u>\$ 2,286,658</u>	<u>\$ 2,197,860</u>	<u>\$ 2,102,955</u>
27									
28	<u>Capital Projects and Expenditures</u>								
29	Capital Costs Funded by Debt (Schedule B - Lines 11 & 33)		\$ (21,018,453)	\$ (10,408,000)	\$ -	\$ -	\$ -	\$ -	\$ -
30	Debt Proceeds (Schedule C - Line 15)		21,018,453	10,408,000	-	-	-	-	-
31	Net Proceeds (Costs) from Debt Financing		<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>
32									
33	Annual Capital Expenditures Funded by Cash (Schedule C - Lines 16 & 43)		<u>\$ (4,214,352)</u>	<u>\$ (2,341,331)</u>	<u>\$ (2,436,038)</u>	<u>\$ (2,535,408)</u>	<u>\$ (2,639,675)</u>	<u>\$ (2,749,079)</u>	<u>\$ (2,863,877)</u>
34									
35	Capital Equipment Replacement Expenditures (Schedule B - Line 50)		\$ (1,628,000)	\$ (1,624,000)	\$ (556,000)	\$ (1,132,000)	\$ (532,000)	\$ (853,000)	\$ (2,903,000)
36	Funding from Capital Equipment Reserve (Schedule C - Line 18)		1,628,000	1,624,000	556,000	1,132,000	532,000	853,000	2,903,000
37	Net Proceeds (Costs) from Capital Equipment Reserve		<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>
38									
39	State Aid Grants (Schedule C - Line 23)		<u>\$ 148,821</u>	<u>\$ 137,545</u>	<u>\$ 132,540</u>	<u>\$ 127,533</u>	<u>\$ 122,526</u>	<u>\$ 117,000</u>	<u>\$ 112,000</u>
40									
41	Net Surplus (Deficit) From Capital Projects and Expenditures		<u>\$ (4,065,531)</u>	<u>\$ (2,203,786)</u>	<u>\$ (2,303,498)</u>	<u>\$ (2,407,875)</u>	<u>\$ (2,517,149)</u>	<u>\$ (2,632,079)</u>	<u>\$ (2,751,877)</u>
42									
43	<u>Unrestricted Retained Earnings</u>								
44	Beginning Balance		<u>\$ (5,500,000)</u>	<u>\$ (10,021,182)</u>	<u>\$ (11,347,970)</u>	<u>\$ (12,220,983)</u>	<u>\$ (12,259,327)</u>	<u>\$ (12,489,818)</u>	<u>\$ (12,924,037)</u>
45	Net Surplus (Deficit) From Operations (Line 26 above)		(455,651)	876,998	1,430,485	2,369,531	2,286,658	2,197,860	2,102,955
46	Net Surplus (Deficit) From Capital Projects and Expenditures (Line 41 above)		(4,065,531)	(2,203,786)	(2,303,498)	(2,407,875)	(2,517,149)	(2,632,079)	(2,751,877)
47	Ending Balance		<u>\$ (5,500,000)</u>	<u>\$ (10,021,182)</u>	<u>\$ (11,347,970)</u>	<u>\$ (12,220,983)</u>	<u>\$ (12,259,327)</u>	<u>\$ (12,489,818)</u>	<u>\$ (13,572,959)</u>
48									
49	<u>Capital Equipment Reserve</u>								
50	Beginning Balance		<u>\$ 11,000,000</u>	<u>\$ 10,979,129</u>	<u>\$ 10,962,258</u>	<u>\$ 12,013,387</u>	<u>\$ 12,488,516</u>	<u>\$ 13,563,645</u>	<u>\$ 14,317,774</u>
51	Capital Equipment Additions Funded by Sewer Rates (Schedule D)		1,607,129	1,607,129	1,607,129	1,607,129	1,607,129	1,607,129	1,607,129
52	Payments for Capital Equipment Expenditures (Schedule D)		(1,628,000)	(1,624,000)	(556,000)	(1,132,000)	(532,000)	(853,000)	(2,903,000)
53	Ending Balance		<u>\$ 11,000,000</u>	<u>\$ 10,979,129</u>	<u>\$ 10,962,258</u>	<u>\$ 12,013,387</u>	<u>\$ 12,488,516</u>	<u>\$ 13,563,645</u>	<u>\$ 14,317,774</u>
54									
55	Total Unrestricted Net Assets		<u>\$ 5,500,000</u>	<u>\$ 957,947</u>	<u>\$ (385,712)</u>	<u>\$ (207,596)</u>	<u>\$ 229,188</u>	<u>\$ 1,073,827</u>	<u>\$ (551,056)</u>

City of Nashua
Analysis of Capital Projects
CSO and Other Projects

Schedule B

Line No.	Description	Total	<<<< PROJECT FUNDING >>>>			PROJECT CASH FLOW >>>>						
			Other	Debt	Cash	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020
<u>Consent Decree Expenditures</u>												
<u>Completed Projects</u>												
1	Wet Weather Facility	\$ 32,375,000	\$ -	\$ 14,700,000	\$ 17,675,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2	Sluice Gate	897,000	-	-	897,000	-	-	-	-	-	-	-
3	Drop Over Structures	1,634,000	-	-	1,634,000	-	-	-	-	-	-	-
4	System Optimization	1,810,000	-	-	1,810,000	-	-	-	-	-	-	-
5	Harbor Ave	5,075,000	-	5,000,000	75,000	-	-	-	-	-	-	-
6	Subtotal - Completed Projects	\$ 41,791,000	\$ -	\$ 19,700,000	\$ 22,091,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
7												
8	<u>In Progress Projects</u>											
9	Disinfection Facility	19,785,000	-	19,625,000	160,000	10,441,000	7,336,000	-	-	-	-	-
10	Storage Tank	5,764,964	-	5,764,964	-	5,264,964	500,000	-	-	-	-	-
11	Subtotal - In Progress Projects	\$ 25,549,964	\$ -	\$ 25,389,964	\$ 160,000	\$ 15,705,964	\$ 7,836,000	\$ -	\$ -	\$ -	\$ -	\$ -
12												
13	<u>Annual Expenditures</u>											
14	Inflow and Infiltration	\$ 500,000	\$ -	\$ -	\$ 500,000	\$ 393,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
15	Consent Decree Operational Expenditures	1,363,946	-	-	1,363,946	600,577	118,015	121,555	125,202	128,958	132,827	136,812
16	Subtotal -Annual Expenditures	\$ 1,863,946	\$ -	\$ -	\$ 1,863,946	\$ 993,577	\$ 118,015	\$ 121,555	\$ 125,202	\$ 128,958	\$ 132,827	\$ 136,812
17												
18	Total - Consent Decree Expenditures	\$ 69,204,910	\$ -	\$ 45,089,964	\$ 24,114,946	\$ 16,699,541	\$ 7,954,015	\$ 121,555	\$ 125,202	\$ 128,958	\$ 132,827	\$ 136,812
19												
20												
21	<u>Collection System and Other Expenditures</u>											
22												
23	<u>Completed Projects</u>											
24	Haines Street	\$ 1,499,658	\$ 634,833	\$ 676,025	\$ 188,800	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
25	Manchester Street	100,000	-	-	100,000	-	-	-	-	-	-	-
26	Net Metering	495,807	245,827	249,980	-	-	-	-	-	-	-	-
27	Subtotal - Completed Projects	\$ 2,095,465	\$ 880,660	\$ 926,005	\$ 288,800	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
28												
29	<u>In Progress Projects</u>											
30	Aeration Blowers & Tank Upgrade	\$ 4,160,973	\$ -	\$ 4,160,973	\$ -	\$ 4,160,973	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
31	Dewatering Equipment Replacement	5,566,516	-	5,566,516	-	1,151,516	-	-	-	-	-	-
32	Other Capital Equipment	2,572,000	-	2,572,000	-	-	2,572,000	-	-	-	-	-
33	Subtotal - In Progress Projects	\$ 12,299,489	\$ -	\$ 12,299,489	\$ -	\$ 5,312,489	\$ 2,572,000	\$ -	\$ -	\$ -	\$ -	\$ -
34												
35	<u>Annual Expenditures</u>											
36	Annual Sewer Infrastructure Improvements	\$ 10,771,877	\$ -	\$ -	\$ 10,771,877	\$ 1,323,000	\$ 1,389,150	\$ 1,458,608	\$ 1,531,538	\$ 1,608,115	\$ 1,688,521	\$ 1,772,947
37	Sewer Structure Replacement	1,885,079	-	-	1,885,079	231,525	243,101	255,256	268,019	281,420	295,491	310,266
38	CSO Flooding	2,800,000	-	-	2,800,000	400,000	400,000	400,000	400,000	400,000	400,000	400,000
39	Merrimack River Levee	150,000	-	-	150,000	150,000	-	-	-	-	-	-
40	Bridge Street Overflow Detention Basin	890,000	-	-	890,000	890,000	-	-	-	-	-	-
41	Hazard Mitigation	50,000	-	-	50,000	46,000	-	-	-	-	-	-
42	Storm Water Abatement	1,479,857	-	-	1,479,857	180,250	191,065	200,618	210,649	221,182	232,241	243,853
43	Subtotal - Annual Expenditures	\$ 18,026,813	\$ -	\$ -	\$ 18,026,813	\$ 3,220,775	\$ 2,223,316	\$ 2,314,482	\$ 2,410,206	\$ 2,510,716	\$ 2,616,252	\$ 2,727,065
44												
45	Total Collection System and Other Expenditures	\$ 32,421,767	\$ 880,660	\$ 13,225,494	\$ 18,315,613	\$ 8,533,264	\$ 4,795,316	\$ 2,314,482	\$ 2,410,206	\$ 2,510,716	\$ 2,616,252	\$ 2,727,065
46												
47	Total Capital Expenditures	\$ 101,626,678	\$ 880,660	\$ 58,315,458	\$ 42,430,560	\$ 25,232,805	\$ 12,749,331	\$ 2,436,038	\$ 2,535,408	\$ 2,639,675	\$ 2,749,079	\$ 2,863,877
48												
49												
50	Capital Equipment Replacement Expenditures	\$ 6,325,000				\$ 1,628,000	\$ 1,624,000	\$ 556,000	\$ 1,132,000	\$ 532,000	\$ 853,000	\$ 2,903,000

City of Nashua
Analysis of Use of Debt Proceeds, Capital Equipment Reserve and State Aid Grants
CSO and Other Projects

Schedule C

Line No.	Project Description	Funding	Total	Debt	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020
1	<u>Consent Decree Projects</u>										
2											
3	Disinfection Facility	SRF	19,785,000	19,625,000	10,441,000	7,336,000	-	-	-	-	-
4	Storage Tank	Bonds	5,764,964	5,764,964	5,264,964	500,000	-	-	-	-	-
5	Subtotal - Consent Decree Projects		<u>\$ 25,549,964</u>	<u>\$ 25,389,964</u>	<u>\$ 15,705,964</u>	<u>\$ 7,836,000</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>
6											
7											
8	<u>Collection System and Other Projects</u>										
9											
10	Aeration Blowers & Tank Upgrade	Bonds	4,160,973	4,160,973	4,160,973	-	-	-	-	-	-
11	Dewatering Equipment Replacement	Bonds	5,567,000	5,567,000	1,151,516	-	-	-	-	-	-
12	Other Capital Equipment	Bonds	2,572,000	2,572,000	-	2,572,000	-	-	-	-	-
13			<u>\$ 12,299,973</u>	<u>\$ 12,299,973</u>	<u>\$ 5,312,489</u>	<u>\$ 2,572,000</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>
14											
15	Total Capital Projects		<u>\$ 37,849,937</u>	<u>\$ 37,689,937</u>	<u>\$ 21,018,453</u>	<u>\$ 10,408,000</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>
16											
17											
18	Capital Equipment Replacement Fund		<u>\$ 6,325,000</u>		<u>\$ 1,628,000</u>	<u>\$ 1,624,000</u>	<u>\$ 556,000</u>	<u>\$ 1,132,000</u>	<u>\$ 532,000</u>	<u>\$ 853,000</u>	<u>\$ 2,903,000</u>
19											
20	<u>State Aid Grants</u>										
21	Current State Aid Grants	\$	785,965		\$ 148,821	\$ 137,545	\$ 132,540	\$ 127,533	\$ 122,526	\$ 117,000	\$ 112,000
22	Estimated State Aid Grants		-		-	-	-	-	-	-	-
23	Total State Aid Grants	<u>\$</u>	<u>785,965</u>		<u>\$ 148,821</u>	<u>\$ 137,545</u>	<u>\$ 132,540</u>	<u>\$ 127,533</u>	<u>\$ 122,526</u>	<u>\$ 117,000</u>	<u>\$ 112,000</u>

Schedule D - CAPITAL REPLACEMENT SCHEDULE							
NASHUA WASTEWATER FACILITY							
FISCAL YEAR 2013							
Assumptions:							
Savings Interest Inflation Rates Compounded Annually						Savings Rate:	2.5%
Future Value is the Inflation Factor						Inflation Rate:	3.0%
Annual Reserve Payment is Discounted by Savings Rate							
Equipment or Structure	Equip. ID No:	Year Acquired	Total Installed Cost	Years Before Replace	Replacement Year	Future Replacement Cost	Annual Reserve Payment
PLANT CAPITAL EQUIPMENT FUND							
Roll-Off	ROF	2000	\$10,000	13	2013	15,000	1,000
WAS Thickener # 1	WAT 1	1989	\$95,000	24	2013	193,000	6,000
Anaerobic Digester Grinders (first half - several grinders)	ADG	2000	\$100,000	13	2013	147,000	9,700
Roll-Off	ROF	2000	\$10,000	13	2013	15,000	1,000
Screw Conveyors (bar screen)	SCR 1	2000	\$50,000	13	2013	73,000	4,800
Screenings Washer	SCW 1	2000	\$70,000	13	2013	103,000	6,800
Screenings Washer	SCW 2	2000	\$70,000	13	2013	103,000	6,800
Wet Well Odor Control Mechanical	WWOC	1992	\$100,000	21	2013	186,000	6,800
WAS Pumps # 1	WAS 1	1995	\$20,000	18	2013	34,000	1,500
WAS Thickener # 2	WAT 2	1989	\$95,000	24	2013	193,000	6,000
Underground Storage Tanks (1)	UST 1	2002	\$80,000	11	2013	111,000	8,900
Plant Air Compressor		1975	\$25,000	38	2013	77,000	1,200
Control Bldg 3 Ton Rail Crane		1975	\$25,000	38	2013	77,000	1,200
Hypochlorite Pump #1		1989	\$17,000	24	2013	35,000	1,100
Hypochlorite Pump #2		1989	\$17,000	24	2013	35,000	1,100
RAS Drive - Pump #1		1989	\$30,000	24	2013	61,000	1,900
WAS Polymer Pump (4 EA)		1989	\$12,000	24	2013	24,000	700

Schedule D - CAPITAL REPLACEMENT SCHEDULE							
NASHUA WASTEWATER FACILITY							
FISCAL YEAR 2013							
Assumptions:							
Savings Interest Inflation Rates Compounded Annually						Savings Rate:	2.5%
Future Value is the Inflation Factor						Inflation Rate:	3.0%
Annual Reserve Payment is Discounted by Savings Rate							
WAS Thickener # 3	WAT 3	1989	\$95,000	24	2013	193,000	6,000
Anaerobic Digester Grinders (second half - several grinders)	ADG	2000	\$100,000	13	2013	147,000	9,700
Primary Tanks Chain & flights # 5	PSD 5	2006	\$25,000	7	2013	31,000	4,100
Hypochlorite Pump #3		1989	\$17,000	24	2013	35,000	1,100
Hypochlorite Pump #4		1989	\$17,000	24	2013	35,000	1,100
RAS Drive - Pump #2		1989	\$30,000	24	2013	61,000	1,900
Blower Building Roof	BBR 1	1989	\$20,000	25	2014	42,000	1,200
Grit Chamber Roof	GCR	1989	\$15,000	25	2014	31,000	908
Raw Sewage Pump # 3+ Controls	RSP 3	1975	\$140,000	39	2014	443,000	6,800
Above ground diesel storage tanks (3)		1999	\$18,000	15	2014	28,000	1,600
Primary Tanks Chain & flights # 1	PSD 1	2007	\$25,000	7	2014	31,000	4,100
Primary Tanks Chain & flights # 2	PSD 2	2007	\$25,000	7	2014	31,000	4,100
Primary Tanks Chain & flights # 3	PSD 3	2007	\$25,000	7	2014	31,000	4,100
Primary Tanks Chain & flights # 4	PSD 4	2007	\$25,000	7	2014	31,000	4,100
RAS Drive - Pump #3		1989	\$30,000	25	2014	63,000	1,800
WAS Polymer Pump (3 EA)		1989	\$10,000	25	2014	21,000	600
Central Generator	CG1	1990	\$200,000	25	2015	419,000	12,300
Roof Administration Bldg	ADM 1	1995	\$45,000	20	2015	81,000	3,200
Aeration Tanks Grid System	ATC 1	1995	\$325,000	20	2015	587,000	23,000
Aeration Tanks Diffusers	ATD 1	2005	\$105,000	10	2015	141,000	12,600
Control Building Instrumental	CBI 1	2000	\$70,000	15	2015	109,000	6,100
Hypochlorite Chambers Mixers # 2	HCM 2	2008	\$12,000	7	2015	15,000	2,000
Primary Sludge Transfer Pumps	PST 1	1985	\$25,000	30	2015	61,000	1,400

Schedule D - CAPITAL REPLACEMENT SCHEDULE							
NASHUA WASTEWATER FACILITY							
FISCAL YEAR 2013							
Assumptions:							
Savings Interest Inflation Rates Compounded Annually						Savings Rate:	2.5%
Future Value is the Inflation Factor						Inflation Rate:	3.0%
Annual Reserve Payment is Discounted by Savings Rate							
Primary Sludge Transfer Pumps	PST 2	1985	\$25,000	30	2015	61,000	1,400
Primary Sludge Transfer Pumps	PST 3	1985	\$25,000	30	2015	61,000	1,400
RAS Pumps # 1	RAS 1	1988	\$80,000	27	2015	178,000	4,700
RAS Pumps # 2	RAS 2	1988	\$80,000	27	2015	178,000	4,700
RAS Pumps # 3	RAS 3	1988	\$80,000	27	2015	178,000	4,700
RAS Pumps # 4	RAS 4	1988	\$80,000	27	2015	178,000	4,700
Sludge Pumping Building Roof	SPR 1	1995	\$20,000	20	2015	36,000	1,400
WAS Pumps # 2	WAS 2	1995	\$20,000	20	2015	36,000	1,400
Water Meter Booster Station	WMB 1	1995	\$75,000	20	2015	135,000	5,300
Office AC Units - Rooftop	ACU 1	2000	\$35,000	15	2015	55,000	3,100
Anaerobic Digester Sludge Pumps	ADSP	2000	\$25,000	15	2015	39,000	2,200
Bar Screen - #1	MBS 1	2000	\$300,000	15	2015	467,000	26,000
Bar Screen - # 2	MBS 2	2000	\$300,000	15	2015	467,000	26,000
RAS Drive - Pump #4		1989	\$30,000	26	2015	65,000	1,800
Raw Sewage Pump # 4 + Controls	RSP 4	1975	\$140,000	41	2016	470,000	6,700
Boat	BOA	2001	\$5,500	15	2016	9,000	500
South Generator	SG1	1990	\$210,000	27	2017	466,000	12,300
Dechlor Building Roof	DBR 1	1991	\$15,000	26	2017	32,000	900
Hypochlorite Chambers Mixers # 1	HCM 1	2010	\$12,000	7	2017	15,000	2,000
Anerobic Digester Sludge Pumps	ADSP	2000	\$25,000	17	2017	41,000	2,000
Hypochlorite Storage Tank # 1	HCT 1	2007	\$75,000	10	2017	101,000	9,000
Primary Tank Odor Control Mechanical	PRI OD	2007	\$200,000	10	2017	269,000	24,000
Anaerobic Digester Vessel and Gas Holding Tank Evaluation	ADV	2000	\$50,000	18	2018	85,000	3,800

	Schedule D - CAPITAL REPLACEMENT SCHEDULE						
	NASHUA WASTEWATER FACILITY						
	FISCAL YEAR 2013						
Assumptions:							
Savings Interest Inflation Rates Compounded Annually						Savings Rate:	2.5%
Future Value is the Inflation Factor						Inflation Rate:	3.0%
Annual Reserve Payment is Discounted by Savings Rate							
Influent Magmeter	IMM 1	2003	\$40,000	15	2018	62,000	3,500
Hypochlorite Storage Tank # 2	HCT 2	2008	\$75,000	10	2018	101,000	9,000
Dechlor Chemical Feed Pumps # 1	DCF 1	2008	\$17,000	10	2018	23,000	2,100
Dechlor Chemical Feed Pumps # 2	DCF 2	2008	\$17,000	10	2018	23,000	2,100
Dechlor Chemical Feed Pumps # 3	DCF 3	2008	\$17,000	10	2018	23,000	2,100
Roll-Off	ROF	2008	\$15,000	10	2018	20,000	1,800
Wet Weather Odor Control (Carbon Filter)	WWOC	2008	\$100,000	10	2018	134,000	12,000
Wet Weather Flow Meter	WWFM	2008	\$50,000	11	2019	69,000	5,500
Actiflo Mixers (4 EA)	AM	2009	\$50,000	10	2019	67,000	6,000
Actiflo Sand Pump (6 EA)	ASaP	2009	\$50,000	10	2019	67,000	6,000
Actiflo Sludge Pump (2 EA)	ASIP	2009	\$55,000	10	2019	74,000	6,600
Pump Bldg 3 Ton Rail Crane		1989	\$25,000	30	2019	61,000	1,400
RAS Piping from Pump #1, #2, #3, #4		1989	\$25,000	30	2019	61,000	1,400
WAS Piping from Pump #1, #2		1989	\$25,000	30	2019	61,000	1,400
WAS Piping from Thickener Pump #1		1989	\$10,000	30	2019	24,000	500
WAS Piping from Thickener Pump #2		1989	\$10,000	30	2019	24,000	500
WAS Piping from Thickener Pump #3		1989	\$10,000	30	2019	24,000	500
Wet Well(s) - Refurbish concrete		1989	\$40,000	30	2019	97,000	2,200
Dry Well(s) - Refurbish concrete		1989	\$25,000	30	2019	61,000	1,400
Process Tanks Slide Gate Operator	PSI 1	1995	\$85,000	25	2020	178,000	5,200
Anaerobic Digester Generator (Wakashau Generator)	ADGen	2000	\$450,000	20	2020	813,000	31,800
Anaerobic Digester Iron Sponge	ADIS	2000	\$10,000	20	2020	18,000	700
Anerobic Digester Vessel Upgrade	ADV	2000	\$250,000	20	2020	452,000	17,700

Schedule D - CAPITAL REPLACEMENT SCHEDULE							
NASHUA WASTEWATER FACILITY							
FISCAL YEAR 2013							
Assumptions:							
Savings Interest Inflation Rates Compounded Annually						Savings Rate:	2.5%
Future Value is the Inflation Factor						Inflation Rate:	3.0%
Annual Reserve Payment is Discounted by Savings Rate							
Gas Holding Tank Vessel & Equip Upgrade		2000	\$200,000	20	2,020	361,000	14,100
Digester Complex HVAC		2001	\$30,000	20	2021	54,000	2,100
Digester Complex Instrumentation		2001	\$25,000	20	2021	45,000	1,800
Digester Heat Exchanger (H. E. Sargent, Inc.)		2011	\$54,000	11	2022	75,000	6,000
Boilers	BOI1	2002	\$100,000	20	2022	181,000	7,100
Car 3	CAR 3	2011	\$27,000	12	2023	38,000	2,800
Car 155	CAR155	2013	\$35,000	10	2023	47,000	4,200
Wet Weather Pump #1	WWP 1	2008	\$75,000	15	2023	117,000	6,500
Wet Weather Pump #2	WWP 2	2008	\$75,000	15	2023	117,000	6,500
Wet Weather Pump #3	WWP 3	2008	\$75,000	15	2023	117,000	6,500
Wet Weather Pump #4	WWP 4	2008	\$75,000	15	2023	117,000	6,500
Wet Weather Screening Conveyor	WWSC	2008	\$75,000	15	2023	117,000	6,500
Wet Weather Bar Rack #2	WWBR	2009	\$300,000	15	2024	467,000	26,000
Emergency Generator North Facilities	GEN 1	2009	\$275,000	15	2024	428,000	23,900
Primary Clarifier Drive 1	PTD1	2005	\$30,000	20	2025	54,000	2,100
Primary Clarifier Drive 2	PTD2	2005	\$30,000	20	2025	54,000	2,100
Anaerobic Digester Boiler #1	ADB 1	2000	\$100,000	25	2025	209,000	6,100
Anaerobic Digester Boiler #2	ADB 2	2000	\$100,000	25	2025	209,000	6,100
Main Gate Influent Gate Operator	IGO 1	2005	\$100,000	20	2025	181,000	7,100
Primary Tanks Coating #1	PSC 1	2007	\$45,000	20	2027	81,000	3,200
Primary Tanks Coating #2	PSC 2	2007	\$45,000	20	2027	81,000	3,200
Primary Tanks Coating #3	PSC 3	2007	\$45,000	20	2027	81,000	3,200
Primary Tanks Coating #4	PSC 4	2007	\$45,000	20	2027	81,000	3,200

Schedule D - CAPITAL REPLACEMENT SCHEDULE							
NASHUA WASTEWATER FACILITY							
FISCAL YEAR 2013							
Assumptions:							
Savings Interest Inflation Rates Compounded Annually						Savings Rate:	2.5%
Future Value is the Inflation Factor						Inflation Rate:	3.0%
Annual Reserve Payment is Discounted by Savings Rate							
Primary Tanks Coating #5	PSC 5	2007	\$45,000	20	2027	81,000	3,200
Aeration Basin/Secondary Clarifier Structural Rehab		2013	\$500,000	15	2028	779,000	43,442
Aeration Basin/Secondary Clarifier Structural Rehab		2013	\$800,000	15	2028	1,246,000	69,485
Wet Weather Bar Rack #1	WWBR	2008	\$300,000	20	2028	542,000	21,200
Wet Weather PS Roof	WWR	2008	\$20,000	20	2028	36,000	1,400
Plant Water System	PWS 1	2009	\$120,000	20	2029	217,000	8,500
Actiflo Roof	AR	2009	\$20,000	20	2029	36,000	1,400
Actiflo Tanks	AT	2009	\$150,000	20	2029	271,000	10,600
Dry Polymer Feeder #1		2009	\$30,000	20	2,029	54,000	2,100
Polymer Run Tank #1		2009	\$30,000	20	2029	54,000	2,100
Polymer Make up Tank #1		2009	\$30,000	20	2029	54,000	2,100
Dry Polymer Feeder #2		2009	\$30,000	20	2029	54,000	2,100
Polymer Run Tank #2		2009	\$30,000	20	2029	54,000	2,100
Polymer Make up Tank #2		2009	\$30,000	20	2029	54,000	2,100
Sand Feeder		2009	\$104,000	20	2029	188,000	7,400
Actiflo Cyclone #1		2009	\$35,000	20	2029	63,000	2,500
Actiflo Cyclone #2		2009	\$35,000	20	2029	63,000	2,500
Actiflo Cyclone #3		2009	\$35,000	20	2029	63,000	2,500
Actiflo Cyclone #4		2009	\$35,000	20	2029	63,000	2,500
Actiflo Cyclone #5		2009	\$35,000	20	2029	63,000	2,500
Actiflo Cyclone #6		2009	\$35,000	20	2029	63,000	2,500
Actiflo Sludge Thickener Tank		2009	\$520,000	20	2029	939,000	36,800
Actflow Flocculation Tank		2009	\$188,000	20	2029	340,000	13,300

Schedule D - CAPITAL REPLACEMENT SCHEDULE							
NASHUA WASTEWATER FACILITY							
FISCAL YEAR 2013							
Assumptions:							
Savings Interest Inflation Rates Compounded Annually						Savings Rate:	2.5%
Future Value is the Inflation Factor						Inflation Rate:	3.0%
Annual Reserve Payment is Discounted by Savings Rate							
Actiflow Clarifier #1		2009	\$300,000	20	2029	542,000	21,200
Actiflow Clarifier #2		2009	\$300,000	20	2029	542,000	21,200
Actiflow Mixing Tank #1		2009	\$318,000	20	2029	574,000	22,500
Actiflow Mixing Tank #2		2009	\$318,000	20	2029	574,000	22,500
Skid #1 Polymer Pump #1, #2, #3		2009	\$30,000	20	2029	54,000	2,100
Skid #2 Polymer Pump #1, #2, #3		2009	\$30,000	20	2029	54,000	2,100
Skid #3 Polymer Pump #1, #2, #3		2009	\$30,000	20	2029	54,000	2,100
Grease Transfer Pump (Bourgen pump)		2010	\$10,000	20	2030	18,000	700
Net Metering Equipment & Transformer		2011	\$150,000	20	2031	271,000	10,600
Sluice Gate		2011	\$700,000	20	2031	1,264,000	49,500
Primary Tanks Sludge Storage Drive # 1	PSA 1	2012	\$55,000	20	2032	99,000	3,900
Primary Tanks Sludge Storage Drive # 2	PSA 2	2012	\$55,000	20	2032	99,000	3,900
Raw Sewage Pump # 1+ Controls (Alice Chambers pump)	RSP 1	2012	\$90,000	20	2032	163,000	6,400
Hypochlorite Pump #5		2009	\$17,000	23	2032	34,000	1,100
Hypochlorite Pump #6		2009	\$17,000	23	2032	34,000	1,100
Blower Bldg Wall Rehab		2013	\$220,000	20	2033	397,000	15,541
Aeration Blower Replacement (3 Units)		2013	\$1,200,000	20	2033	2,167,000	84,832
Instrumentation		2013	\$200,000	20	2033	361,000	14,132
Grit Chamber HVAC	GCHV	2013	\$100,000	20	2033	181,000	7,086
Grit Chamber Grit Classifier # 1	GCC 1	2013	\$100,000	20	2033	181,000	7,086
Grit Chamber Grit Classifier # 2	GCC 2	2013	\$100,000	20	2033	181,000	7,086
Grit Chamber Electrical	GCE	2013	\$140,000	20	2033	253,000	9,904
Grit Chamber Instrumentation	GCI	2013	\$60,000	20	2033	108,000	4,228

Schedule D - CAPITAL REPLACEMENT SCHEDULE							
NASHUA WASTEWATER FACILITY							
FISCAL YEAR 2013							
Assumptions:							
Savings Interest Inflation Rates Compounded Annually						Savings Rate:	2.5%
Future Value is the Inflation Factor						Inflation Rate:	3.0%
Annual Reserve Payment is Discounted by Savings Rate							
Grit Chamber Piping	GCP	2013	\$50,000	20	2033	90,000	3,523
Grit Pump # 1	GCP 1	2013	\$25,000	20	2033	45,000	1,762
Grit Pump # 2	GCP 2	2013	\$25,000	20	2033	45,000	1,762
Grit Chamber Cyclo Blower # 1	GCB 1	2013	\$25,000	20	2033	45,000	1,800
Grit Chamber Cyclo Blower # 2	GCB 2	2013	\$25,000	20	2033	45,000	1,800
Grit System Slide Gate		2013	\$50,000	20	2033	90,000	3,500
Sludge Processing Mechanical Piping # 1	SPP 1	2013	\$700,000	20	2033	1,264,000	49,482
Belt Press Conveyors	BPC	2013	\$150,000	20	2033	271,000	10,609
Sludge Processing Electrical	SPE 1	2013	\$200,000	20	2033	361,000	14,132
Sludge Processing Instrumentation	SPI 1	2013	\$150,000	20	2033	271,000	10,609
Sludge Processing Mechanical Piping # 2	SPP 2	2013	\$700,000	20	2033	1,264,000	49,482
Sludge Processing Mechanical Piping # 3	SPP 3	2013	\$700,000	20	2033	1,264,000	49,482
Press Polymer Pump (4 EA)		2013	\$125,000	20	2033	226,000	8,847
Sludge Pumping Building Scum Ejector # 1	SPE 1	2013	\$150,000	20	2033	271,000	10,609
Sludge Pumping Building Scum Ejector # 2	SPE 2	2013	\$150,000	20	2033	271,000	10,609
Sludge Processing Building Odor System	SPO 1	2013	\$50,000	20	2033	90,000	3,523
Raw Sewage Pump # 2+ Controls	RSP 2	2013	\$90,000	20	2033	163,000	6,400
Roll Off Truck # 111		2013	\$177,000	23	2036	349,000	11,400
Grit Chamber Screw Conveyor # 1	GCS 1	2013	\$50,000	23	2036	99,000	3,237
Grit Chamber Screw Conveyor # 2	GCS 2	2013	\$50,000	23	2036	99,000	3,237
Secondary Clarifier Drive Rehab (1 Units)		2013	\$80,000	24	2037	163,000	5,039
Electrical		2013	\$300,000	24	2037	610,000	18,857
TOTALS PLANT CEF			\$19,264,000			\$34,598,000	\$1,453,329

Schedule D - CAPITAL REPLACEMENT SCHEDULE							
NASHUA WASTEWATER FACILITY							
FISCAL YEAR 2013							
Assumptions:							
Savings Interest Inflation Rates Compounded Annually						Savings Rate:	2.5%
Future Value is the Inflation Factor						Inflation Rate:	3.0%
Annual Reserve Payment is Discounted by Savings Rate							
COLLECTION SYSTEM CAPITAL EQUIPMENT FUND							
Vacuum Truck 87	VAC87	2000	\$200,000	13	2013	294,000	19,400
Fulton Street PS	FPS	1995	\$180,000	19	2014	316,000	13,200
Pump Station Pumps (4)	PSP	1995	\$70,000	19	2014	123,000	5,100
Spaulding Street PS	SPS	1995	\$180,000	19	2014	316,000	13,200
Pump Station Pumps (3)	PSP	1995	\$60,000	19	2014	105,000	4,400
Truck 62 - '04 Chevy 2WD- Plant		2004	\$12,000	10	2014	16,000	1,400
Truck 86 - '05 Ford		2004	\$12,000	11	2015	17,000	1,400
National Street PS (Sandy Pond)	NPS	1995	\$350,000	20	2015	632,000	24,700
Truck 136 - 1/2 Ton Chevy w/crane		2004	\$20,000	12	2016	29,000	2,100
Truck 135 - 3/4 Ton Chevy		2004	\$15,000	12	2016	21,000	1,500
Truck 176- Ford F350		2004	\$19,000	12	2016	27,000	2,000
Collection Truck 82 (1 Ton w/ Crane)		2004	\$25,000	13	2017	37,000	2,400
TV Video Truck 112	TVT 1	2002	\$110,000	15	2017	171,000	9,500
Truck 4 - CB Cleaner w/ Clamshell Bucket		2004	\$40,000	14	2018	61,000	3,700
Kubota Tractor		2004	\$15,000	15	2019	23,000	1,300
Street Sweeper		2004	\$90,000	15	2019	140,000	7,800
Vacuum Truck 171	VST 171	2005	\$200,000	15	2020	312,000	17,400
Portable Generator (big one)		2000	\$20,000	20	2020	36,000	1,400
Watson Street PS	WPS	1995	\$350,000	25	2020	733,000	21,500
6" Dewatering Pump (Flood Relief)		2004	\$5,000	20	2024	9,000	400
TOTAL COLLECTION SYSTEM CEF			\$680,000			\$1,253,000	\$153,800

Schedule D - CAPITAL REPLACEMENT SCHEDULE									
NASHUA WASTEWATER FACILITY									
FISCAL YEAR 2013									
Assumptions:									
Savings Interest Inflation Rates Compounded Annually								Savings Rate:	2.5%
Future Value is the Inflation Factor								Inflation Rate:	3.0%
Annual Reserve Payment is Discounted by Savings Rate									
TOTAL CEF			\$19,944,000			\$35,851,000	\$1,607,129		

City of Nashua
Debt Service Schedule
FY2014 through FY2020

Schedule E

<u>EXISTING DEBT</u>									
<u>Line No.</u>	<u>Project</u>	<u>Debt Amount</u>	<u>Debt Type</u>	<u>FY2014</u>	<u>FY2015</u>	<u>FY2016</u>	<u>FY2017</u>	<u>FY2018</u>	<u>FY2019</u>
1	Sewer Component Refunding	\$ 186,478	SRF	\$ 15,735	\$ 14,970	\$ -	\$ -	\$ -	\$ -
2									
3	Sludge Digester	\$ 9,225,408	SRF	\$ 626,000	\$ 605,409	\$ 584,818	\$ 564,227	\$ 543,635	\$ 523,043
4									
5	Wet Weather Facility	\$ 14,700,000	SRF	1,103,852	1,082,155	1,060,458	1,038,761	1,017,064	995,366
6									
7	Haines Street	\$ 676,025	SRF	52,686	51,637	50,588	49,539	48,490	47,440
8									
9	Net Metering	\$ 249,980	SRF	29,363	28,878	28,393	27,908	27,423	26,938
10									
11	Storage Tank	\$ 5,764,964	Bonds	460,511	460,604	450,238	439,871	426,915	413,958
12									
13	Aeration Blowers & Tank Upgrade	\$ 4,160,973	Bonds	332,383	332,450	324,968	317,487	308,134	298,782
14									
15	Dewatering Equipment Replacement	\$ 2,864,898	Bonds	255,545	255,596	249,844	244,092	236,901	229,710
16									
17	Subtotal - Existing Debt Service			<u>\$ 2,876,075</u>	<u>\$ 2,831,700</u>	<u>\$ 2,749,308</u>	<u>\$ 2,681,884</u>	<u>\$ 2,608,562</u>	<u>\$ 2,535,238</u>
18									
19									
20	<u>NEW DEBT</u>								
21									
22		<u>Debt Amount</u>		<u>FY2014</u>	<u>FY2015</u>	<u>FY2016</u>	<u>FY2017</u>	<u>FY2018</u>	<u>FY2019</u>
23									
24	Disinfection Facility	\$ 19,625,000	SRF	\$ -	\$ -	\$ 1,515,050	\$ 1,488,360	\$ 1,461,670	\$ 1,434,980
25									
26	Harbor Ave	\$ 5,000,000	SRF	386,040	378,880	371,720	364,560	357,400	350,240
27									
28	Dewatering Equipment	\$ 2,701,618	Bonds	-	208,565	204,891	201,217	197,542	193,868
29									
30	Capital Equipment	\$ 2,572,000	Bonds	-	205,760	201,902	198,044	194,186	190,328
31									
32	Wet Weather Facility	\$ 15,000,000	SRF	1,250,000	1,250,000	1,250,000	1,250,000	1,250,000	1,250,000
33									
34	Subtotal - New Debt Service			<u>\$ 1,636,040</u>	<u>\$ 2,043,205</u>	<u>\$ 3,543,563</u>	<u>\$ 3,502,181</u>	<u>\$ 3,460,798</u>	<u>\$ 3,419,416</u>

**City of Nashua
Analysis of Wastewater Fund
FY2002 to FY2014**

Schedule F

Line No.	Fiscal Year		Year End Balance	Rate Change	% Change	Type of Rate Change	Volumetric Change
1	2002		\$ 24,023,769				
2	2003		\$ 24,007,147				
3	2004		\$ 25,885,082	(Decrease)	-27%	Volumetric Rate Only	\$1.66 to \$1.22
4	2005		\$ 26,563,313				
5	2006		\$ 25,038,320				
6	2007		\$ 13,463,254				
7	2008		\$ 1,036,825				
8	2009		\$ (6,211,530)				
9	2010		\$ 8,629,973	Increase	27%	Volumetric Rate Only	\$1.22 to \$1.55
10	2011		\$ 4,608,016				
11	2012		\$ 5,044,891	Increase	15%	Demand and Volumetric	\$1.55 to \$1.78
12	2013		\$ 5,500,000				
13	2014	Est	\$ 960,000	Increase	15%	Demand and Volumetric	\$1.78 to \$2.05